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The Origin and Development of the Apprenticeship System

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TERMINOLOGY

Apprentice: A worker who learns according to a written or oral agreement a recognized skilled trade requiring two or more years of on-the-job work experience and related instruction prior to the time he is considered a qualified journeyman.

Apprenticeship: Training for those occupations commonly known as skilled crafts or trades that require a wide and diverse range of skills and knowledge, as well as maturity and independence of judgment.

Artisan: A highly trained man in some mechanic art or trade.

Domestic System: The system where each household was a production center and all members were producers.

Free of the Trade: A term used to express that the apprentice was sufficiently educated in the secrets of the craft and sufficiently skilled in its work and had become a journeyman; freedom of the trade was also granted upon patrimony or redemption.

Guild: A medieval association of men with kindred pursuits or common interests, formed to protect the interests of their trades and crafts.

Indenture: A contract by which an apprentice is bound to a master.

Indentured Servant: A poor person who would contract to work for a term of years, without pay, for anyone who would pay his passage across the Atlantic. Sometimes debts were paid by becoming an indentured servant for a length of time.

Master: A workman so proficient as to follow his trade independently and teach apprentices.

Modern American: The period of time from 1900 to 1966.

Patrimony: The obtaining of freedom of the trade by inheritance of a trade.

Redemption: The purchase of freedom of the trade by the payment of a sum of money.

Skill: The ability to use one's knowledge effectively; technical proficiency; developed ability.

INTRODUCTION

Industrial Arts is a phase of general education, which concerns itself primarily with the development of the student. A basic function of general education is to enable young persons to understand their environment so that they can deal with it intelligently and effectively. In Colonial days nearly everyone had a basic understanding of apprenticeship; today comparatively few people have knowledge of apprenticeship history and its development into present day life.

This work has broadened the author's knowledge of the origin and development of the apprenticeship system; the historic development and modern practices can be presented to the students as related classroom information. Industrial Arts teachers should be prepared to give limited guidance to those pupils who are not college bound and to those who need or desire information concerning apprenticeship as a method of education and training for the world of work.

It is the author's intention that the readers of this work will be made aware of the role that apprenticeship has played in America's educational development and

the present need of apprenticeship as a method of education and training youth and adults for employment. America's insurance for a strong and independent nation lies in its industrial progress and an adequate number of skilled craftsmen for the future.

The Origin and Development of the Apprenticeship System

Ancient

Civilization as we know it today was created by tools. In the beginning man's only tools were clubs, sharp chips of rock and bones of animals; therefore, it was only natural that the Stone Age was a period of slow material and social progress. Moving into the Bronze Age brought with it an entirely new culture. The people began to cultivate crops to grow food and to raise domesticated animals. This was the beginning of the Agricultural Revolution. Once they grew crops and raised animals for food, a great change took place in their way of life. People began to live in villages, and there was time now for making pottery and cooking vessels and weaving cloth. Those who excelled in any of the new activities became full-time craftsmen and exchanged their wares for food and commodities. This was only the beginning of specialization.

This new kind of living brought the necessity for new rules to live by such as property rights and social laws; problems which were much different from those of a roaming hunter. Instead of hunting he applied his thinking and knowledge in new fields--developing balanced scales for weighing and crop irrigation. Graphic symbols

appeared in man's communication and the smelting of iron led to better tools. With the development of steel tools came the specialized trades: the blacksmith, the carpenter the tool maker, and many others. Education was mainly by apprenticeship, with only very little, if any, formal education.

From the Babylonian code of about 2250 B. C. history shows that it was more or less customary for an artisan to adopt a son, if he did not have a son of his own, and teach him his handicraft. In fact, the law required him to teach an adopted son his trade.

From history it is also found that as early as 18 B. C. indentures were used in Egypt as a means of educating the youth and preparing them for a life's work. Many other instances in history show that the system of apprenticeship has been an important education process since the beginning of man. Skills being passed from father to son, from master to novice.

The early Jewish law placed upon the father the duty of teaching a trade to his sons. "As it is your duty to teach your son the law, teach him a trade."[1] The custom was for the son to go to the school of the rabbis in the

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[1]Lee, Edwin A., Ph.D., Editor, Objectives and Problems of Vocational Education (New York: McGraw-Hill Book Company, Inc., 1938), 3.

morning to learn the laws and to work with his father in the afternoon to learn his handicraft. Probably the greatest example we have of this is a man called Jesus. The point of thought is not in His teachings and philosophies but in His method of training and education. Jesus was trained in the law under the teaching of the rabbi just like all Jewish children of that time, and He also learned His father's trade of carpentry by apprenticing under His father. When Jesus reached maturity and was teaching His philosophies of life and living, He used the same method in training others with which He had been trained. Take the twelve disciples for example. We can compare their three years of training to a three-year apprenticeship in personal evangelism. For three years they followed Jesus, watching, listening, and learning from Him. In the third year He was crucified and they were now ready to present His philosophies to the multitudes.

The apprenticeship system has a much more ancient origin than is commonly thought by most people. It probably goes back to the very beginning of man because the apprentice system grew out of home relationships, and it retained these relationships until the Industrial Revolution. The final phase of apprenticeship was reached in the ancient world when boys were taken by the craftsmen for a period

of time (usually years) for the purpose of teaching them their crafts in exchange for labor or for pay. The length of apprenticeships were not uniform and varied in many agreements and the apprenticeship agreement or contract, many times verbal, was purely a private agreement or contract between the father, the son, and the craftsman.

Medieval

With the fall of Rome and the sudden hostile raids and destruction by the barbarians of the fifth century, there is little to be said of education. From doing research in this era, it is rather easy to understand why they call this the Dark Ages. It was a static culture void of aggressiveness and permeated with "intellectual stagnation."

Christian education began to rise in popularity because strong defenders were needed not only to propagate the faith but to preserve it against barbarian influences. Christian education was moral, religious, and vocational. Many schools were vocational in so far as they prepared for the priesthood. The Catachetical schools and Episcopal schools were such schools, directed for the training of the clergy.

"That there ever was a time when some form of apprenticeship as a method of training for the crafts did not exist is highly improbable, but all records of apprenticeship as a legal institution seem to have disappeared sometime in the early part of the Christian era not to reappear until the closing years of the eleventh century or the beginning of the twelfth century."[1]

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[1]Mays, Arthur B., The Problem of Industrial Education (New York: The Century Company, 1927), 26.

"Up to the eleventh century the European towns were made up of officials, old freemen and bondmen; the craftsmen being for the most part bondmen belonging to a lord, a bishop, or some wealthy merchant. The free craftsmen constituted an insignificant part of the population and it is most unlikely that they were strong enough at the beginning of their organization in fraternities to create and control any system of indentured apprenticeship."[1] In the eleventh century craft guilds made their appearance. However, little is known about the earliest craft guilds and no definite references to indentured apprenticeship appear in the records of history until a much later period.

The craft guilds appeared very slowly and gradually grew through the handicraft era and the thirteenth century, a time when many of the cathedrals in Europe were built. During this time the trades were organized into guilds controlled by the masters and the regulation of apprenticeship was exclusively in the hands of the guilds that represented the various trades of that day. The guilds in Europe at that time were private organizations. Therefore, the regulations controlling the apprenticeships were also private. It was not until the fourteenth and fifteenth centuries that the craft guilds reached a period of

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[1]Mays, Arthur B., The Problem of Industrial Education (New York: The Century Company, 1927), 26-27.

importance in city affairs, and that the indentured apprenticeship gradually reappeared and became an important factor in economic life. By 1563, apprenticeship had gained popularity until it was the common method of education for the general public. Because the apprenticeship system was touching the lives of so many people in England, the Statute of Artificers was passed in 1563. This was the first comprehensive public law enacted concerning apprenticeships. This act did not introduce new ideas into the regulation of apprenticeship but reorganized existing customs and procedures. Regulation was now taken over by the state, that had up to now been regulated by private guilds.

There were three major components of this act, "regulation of the contract of service for all hired labor, wages assessment by the justices of the peace, and the regulation of apprenticeship."[1] The important features of the statute are: first, the apprentice was now bound by a formal and written indenture with a length of seven years of service. Secondly, only responsible householders were allowed to take an apprentice. This did not guarantee that apprentices would receive fair treatment, but it did help place them with craftsmen of a somewhat select group

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[1]Davies, Margaret Gay, The Enforcement of English Apprenticeship (Cambridge, Massachusetts: Harvard University Press, 1956), 1.

who were interested in their apprentices. Thirdly, it provided for an organized system of poor relief, through apprenticeship, to children of paupers. This took the relief off the state and put it on good citizens who in turn received labor for their training the apprentices. This act also permitted only townspeople to enter apprenticeship; people from the country could not. This favored the town boys and gave them a trade more profitable than agriculture.

These statutes were fairly well upheld and enforced once an agreement had been entered although patrimony and redemption were possible means of becoming "free of the trade." The main reason for insuing these high standards was to protect the local guilds from the competition of craftsmen from other towns who degraded the prestige of their guilds and to fight the rapidly growing new domestic system of production, which in time played a big part in the destruction of the old guilds.

The Poor Law of 1601 gave the public authorities additional power with regard to apprenticeship. At the time when this act was passed the relief of the poor was one of the most pressing problems of the time. The number of unemployed and poor had been increasing. Idleness made vagabonds, and there were statutes imposing severe penalties on the beggar. Therefore, the Poor Law was

"designed to provide work for those who could work, relief for those who could not, and punishment for those who would not."[1] Many of the poor were put into apprenticeship to educate them in a trade that would support and make respectful citizens out of them.

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[1]Seybolt, Robert Francis, Apprenticeship & Apprenticeship Education in Colonial New England & New York (New York: Teachers College, Columbia University, 1917), 19.

Early American

"The story of the discovery and settlement of the New World is now fast becoming ancient history. The industrial development of the country, however, has received but little attention as compared with the political development."[1] Receiving even less attention is the mother of the industrial development: the crafts and trades and the educational means of becoming a skilled craftsman, the apprenticeship system. The skilled craftsmen of the crafts and trades were the men who promoted this country's industrial development; it was their ability and efforts that were responsible for such great achievements.

Many of these industrial promoters had received their training in England. Therefore, it is only logical to think that any group of people colonizing in a new place will bring with them many of the traits and characteristics of the mother country. This is why apprenticeship in early America had all the characteristics of the English system. One difference that may be pointed out is that the apprentice in early New England was usually one born in the Colonies, while the indentured

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[1]Sears, William P., Jr., Ph.D., The Roots of Vocational Education (New York: John Wiley & Sons, Inc., 1931), 16.

servant was usually an immigrant serving his time to pay for his passage.

The Statute of Artificers of 1563 and the Poor Law of 1601, which controlled apprenticeship in England during the time of the founding of the American Colonies, were not considered by the Colonies as statutes in their new country even though much of their apprenticeship methods and relief for the poor were very much identical to those of England and the Colonies dealt with them using old English customs.

Prior to 1700, public schools as we think of them today did not exist. Private schools were available but tuition was more than the poor could afford; therefore, apprenticeship was used by all who could not afford to educate their children through private schools. Consequently, the poor and needy had a means of educating their children sufficiently to earn a livelihood. "Besides being a method of education and of poor relief, apprenticeship was frequently used as a penalty for idleness or as punishment for debt."[1]

The practices, in colonial apprenticeship, as well as the legislation dealing with apprenticeship, were based mainly upon ideas of community welfare and needs of the

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[1]Bergevin, Paul, Industrial Apprenticeship (New York: McGraw-Hill Book Company, Inc., 1947), 12.

children. Apprenticeship was regarded not only as the necessary and appropriate means of entering a trade but was also the most fundamental educational institution of the period. In fact, "all children not having estates otherwise to maintain themselves were obliged to engage in some form of useful occupation."[1]

This clearly shows the two kinds of apprenticeships: voluntary and compulsory. The compulsory or forced apprentices were placed with those in the community who could see they did not grow up being dependent upon society for their existence. Little attention seems to have been given the forced apprentice after he was once placed, for many of these apprentices did not receive the proper vocational training intended and were exploited for cheap labor. Through later legislation, the masters were required to train them for the trades, and improvements were made.

In Colonial America most apprenticeships existed in the North, which developed early as the industrial section of the country while the South developed as the agricultural section with many large plantations. The plantations needed laborers, not skilled craftsmen; therefore, in the South, apprentices were fewer while indentured servants were more common than in the North. Quite a trade built

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[1]Bergevin, Paul, Industrial Apprenticeship (New York: McGraw-Hill Book Company, Inc., 1947), 23.

up in transporting the poor people to the new country because the plantation owners realized a substantial profit from their labor above the expense of their keep and cost of the indentures. Therefore, for mercenary reasons many indentured servants were wanted.

Just as in the English system, the master took in the apprentice and he became part of the master's household. The apprentice was given board, lodging, and clothing and some general education. Quite frequently this education was nothing more than teaching the apprentice how to read and write and giving him religious instructions.

The length of apprenticeships varied greatly. Some were one year. Others went to the extreme of twenty years, but the majority of apprentices reached age twenty-one or older before they were freed from the trade.

In 1641, the General Court of the New Plymouth colony passed an act adopting the English Poor Law of 1601 to the needs of their colony.

"In 1642 the Massachusetts Bay Colony passed a comprehensive apprenticeship law because there had been 'a great neglect in many parents and masters in training their children in labor and learning and other employment which may be profitable to the Commonwealth.'"[1] The Puritans wanted their children to be able to read the scriptures but

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[1]Bennett, Charles Alpheus, History of Manual and Industrial Education up to 1870 (Peoria, Illinois: Charles A. Bennett Company, Inc., 1926), 268.

also felt that there was virtue in work, and idleness was sin.

Some masters were not capable of teaching their children and apprentices to read and write, but according to law the children must receive this education. "Illiterate masters were obliged, therefore, to send their apprentices to persons who could teach them which in most cases, meant that they sent the apprentices to schools."[1] So the elementary schools made their appearance in the colonies and in 1647 the General Court of Massachusetts ordered that every town of fifty householders must appoint one of their residents as a school teacher. The teacher should be paid by the parents and masters or by the inhabitants of the colony. This law started the free public school in America. School was usually held in the evenings after a day's work in the trade; reading and writing were the subjects taught.

About this time there was a famous family of silversmiths by the name of Revere. Paul, one of the sons, had great ability as an artisan and was extraordinary in his activities and achievements. Had Longfellow never immortalized his "midnight ride" Paul Revere would be better know today as a master craftsman than as a patriot. Paul

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[1]Seybolt, Robert Francis, Apprenticeship & Apprenticeship Education in Colonial New England & New York (New York: Teachers College, Columbia University, 1917), 41.

Revere was known for the fine silver he produced in his Boston shop. Even today he is still acknowledged to be America's greatest silversmith. His designs were so pure and graceful they have never been equalled. When he finished a piece of his work, Paul Revere marked his name deeply and boldly into the front to tell the world that this was his very best. Paul learned this craft under his father by apprenticeship and as customary of that time, in the father-to-son relationship, two of Paul's sons served their apprenticeship in the same family shop in Boston under their father, a great master of the silversmith trade. Paul was a true craftsman not just in silver but also in copper, the casting of church bells, ship hardware, and false teeth. He was a pioneer industrialist and is known as the founder of the copper and brass industry in this country. The present day Revere Copper and Brass Company proudly carry his name.

There are many other noteworthy men who received their start and education through apprenticeship: Isaiah Thomas, Samuel Green, Benjamin Franklin, and many others. No matter what trades these men might have undertaken, they were destined to make history. They were driven by a strong dedication to never be satisfied with "just enough" but to strive always for excellence. This characteristic we find in the true craftsmen: the spirit and attitude taught in apprenticeship that make the trades successful

and worthy of pride and honor.

The roots of the Industrial Revolution lie in the series of great mechanical inventions that developed between 1760 and 1820, and when Eli Whitney introduced mass production in 1801, the revolution had begun. This method of production has clearly left its mark in America and the world.

With this introduction of machines and mass production in the 1800's and early 1900's a change began to take place in the American system of apprenticeship. The system of handcraft began to be replaced by the factory system. One individual no longer made the article himself but only certain parts of it. The need for the highly skilled craftsman began to decline and the demand for cheap labor increased. This revolution is what brought the decline of the domestic shops and also the domestic indentures.

No longer was it necessary for the master to know the whole trade because in industry it was only necessary for him to teach and train the laborers parts of the trade. Instead of being a true master he now was more like a foreman in charge of one phase of the industry's operation.

Finding cheap labor was a major problem because many of the skilled craftsmen did not adjust to the new factory system of production. They continued their trades as skilled artisans producing their wares and articles as they always had. There are many reasons why they failed to

accept the factory system but mainly it was a change of custom and it takes years to change a man after he has once been molded into a certain pattern of life. Another reason was that these men were highly skilled artisans and very proud of their work and accomplishments, and the factory system failed to give its workers this pride of achievement in making something from start to finish. It was only a repetitious never ending duty of making pieces and parts. Also, industry was looking for cheap labor and were not willing to pay high enough wages to attract the highly skilled craftsmen, therefore, employers found the answer to cheap labor in the hiring of children and women.

The first factories were small but they started one of the most serious problems in America. Its effects have reached far in America and even other countries. It is the beginning of one chapter of apprenticeship history that has been difficult to outlive; the exploitation of poor children as well as poverty-stricken men and women. Children as young as eight years old were employed and worked twelve or thirteen hours a day under bad working conditions. Even the apprenticeship system was exploited. Many young men were lured into an indenture thinking they would learn a trade but were given little or no opportunity to learn a trade or skill; instead it became nothing more than a method of obtaining cheap labor.

It was not, however, just the factory system of using

unskilled workers that caused the decline of the apprenticeship system. At this time the West was showing rapid development and there was much growth in agriculture. The farmer preferred his independent life and the adventurous reports of the pioneers were much more attractive to the American boys than several years of apprenticeship and being bound to a master. Consequently, few chose to learn a trade and many went West for adventure and to pan for gold.

This period of adjustment from the handicraft era to the factory method of manufacturing and the development of the West caused a sharp decline in the apprenticeship system. Apprenticeships did continue to exist through this period and even into present day, but it fell far short of what it had previously been. Industry's main interest was not the education of the laborers as it was in apprenticeship but rather producing products and showing financial gains. To make cheap laborers work long hours, to speed them in their work by means of corporal punishment, to feed them poorly and give only brief breaks for eating, to provide ill-kept sleeping quarters, and anything else that would help show greater profits were considered business virtues. Such conditions marked the early period of the Industrial Revolution. This exploitation of children and unfortunates was finally put to an end, but not erased from history, after public sentiment brought about regulative acts.

From the very beginning of the factory system, there have been three types of workers: first, the unskilled laborer who tends furnaces, sweeps floors, and performs such jobs that require no skill; secondly, the factory operative who only needs dexterity and endurance to perform such jobs as are on assembly lines; thirdly, the highly skilled mechanic who invents, builds, installs, and repairs. Those of the latter group were the directors of the unskilled and factory operative workers and often were or became the owners of the factories. These highly skilled mechanics were men that used to be masters in trades and crafts before the coming of the factory system. They saw opportunity in the new factory system, accepted it and made quick transitions from the old to the new method of production. In so doing many became quite well to do.

To the other skilled craftsmen, who could not make the readjustments necessary for the transition from the domestic system to the factory system, the results of the Industrial Revolution worked severe hardships. Many became paupers. They could not compete against the factory system which could produce and market products at a lower cost.

The unskilled and factory operative workers needed little or no training for their work but the skilled mechanic did, therefore, the traditional method of training in mechanics became the indentured apprenticeship.

Apprenticeship, prior to the factory system, was a word that carried real meaning and was highly respected. Unfortunately, the word continued after the appearance of the factory system and was used undiscriminatingly. Apprenticeship lost its respect and much of its meaning in the last quarter of the eighteenth century; the time of its sharpest decline. Though unpopular and less used the apprenticeship method did continue into and through the nineteenth century.

Apprenticeship, through history and up to the Industrial Revolution, was the primary means of educating youth for a life's work and also for the inductance into adult culture. With the decline of the apprenticeship system came the rise of the free public school to continue the education of the youth. The schools were very elementary at first but grew and developed into the current educational system we have today.

Modern American

Technical change is as old as civilization and since time immemorial. The ways of life of the people have been transformed by the introduction of new tools, machines, and new technical procedures. Inventions like the use of steam, the factory assembly line, the internal-combustion engine, automation, and nuclear power have had a major role in developing our present day culture, and still, technology continues to play an ever increasing role in the lives of the American people. Libraries, industry, and educational institutions find it difficult to keep pace with the cutting edge of technology that is so rapidly cutting down barriers and mysteries that were the impossibles of yesterday. What has this type of culture meant to education? A problem.

The Industrial Revolution, as history has proven, was one of the most significant changes in human history. Not only was the true type of apprenticeship destroyed but the social and economic structure was also greatly affected. Colonies and towns became cities, great industrial cities, and commerce was changed. Ideas of local laws and government were fundamentally altered, and many human activities were reorganized. The leisurely craftsmanship methods of medieval and early American times

had nearly disappeared. The idea of local production changed to national and world production. The immediate and direct effects of this great change in human history are found in the new methods of production and the new types of work demanded of the industrial workers.

With the coming of the factory and mass production came specialization, sometimes known as division of labor. This demanded skilled workers not only to design, install, and maintain complicated machines and equipment, but also in construction, welding, masonry, electrical, drafting, machining, tool making, plumbing; and if continued the list would be very lengthy. This demand of skilled craftsmen re-established the apprenticeship system to train young men in the arts of the trades. It should be known that this was not a rapid change; it was a change taking place over several years. In fact, it was not until the latter part of the nineteenth century and early part of the twentieth century that the true apprenticeship system began to re-establish itself, to raise its standards, and to gain back public respect.

Apprenticeship has taken on a new meaning in the field of mass production than it had in the medieval and early American periods. Today's apprenticeship is much more specialized. Where the apprentice used to be trained in the arts of product needs, design, construction, finishing, and marketing; today the apprentice specializes in one

area of concentration instead of trying to master several. We no longer have the "Jack-of-all-trades," for each trade has become a science, a specialized and technical science.

In 1911, Wisconsin passed an apprenticeship law. Organized labor supported this legislation and it has become the basis of a nation-wide movement to promote apprenticeship as a method of training to meet present day needs. It provided for an indentured system to be in written form and signed by the apprentice, parents, and employer. The minimum term of service was one year. The agreement had to state the type of trade or craft to be taught and the date when the apprenticeship was to begin and end. It stated "the hours to be spent in work and hours to be spent in instruction in a public vocational school with a minimum of four hours per week of instruction and a maximum of 55 hours per week in service."[1] It also provided that the apprentice was to receive the hourly rate of pay for the time he was required to attend the vocational school. Several states adopted similar acts and the unions, employers, and young men began finding a common ground for apprenticeship training. In 1915, Wisconsin passed another law that placed the apprenticeship under the jurisdiction of an industrial commission. These Wisconsin laws brought uniformity to the system of

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[1]Lee, Edwin A., Ph.D., Editor, Objectives and Problems of Vocational Education (New York: McGraw-Hill Book Company, Inc., 1938), 346.

apprenticeship in that state.

The first great change in American technological development was the Industrial Revolution. The second great change was that of mass production. What the state of Wisconsin achieved with these laws is that they organized apprenticeship to fit this great change, mass production.

Early in the twentieth century a new type of apprentice school came into the industrial education field. It was called the "corporation apprentice school." From 1905 to 1910, many corporations started a "corporation apprentice school" and began training programs for their apprentices. They were conducted and maintained by the corporation. Besides offering practical work to the apprentices these schools usually taught science, mathematics, and drawing. A few of these private schools were successful and are still in existence today.

Early federal activities in apprenticeship were patterned after the Wisconsin acts. Organized labor and employers joined in backing the national program, but then under the National Recovery Act, federal intervention began. The main interest was getting adults back to work and little attention was given to the needs of youth, and apprenticeship standards went through trying days, in fact, even declined. Labor unions made repeated demands to restore the standards and the result was that labor and

management were both given representation on the reorganized Federal Committee on Apprentice Training.

This committee worked on plans affecting apprenticeship on a national scale. The plans were a combined arrangement of written agreements between apprentice and employer, and between the unions and employers. With this new system the novice was indentured if his contract and his employer were approved by a local and a state apprentice committee on apprenticeship training. This was the beginning of apprenticeship registration. Registration of the apprenticeship program with the state or local Bureau of Apprenticeship and Training Office was necessary to be fully recognized and certified, sometimes called accredited.

On June 6, 1933, the Wagner-Peyser Act established the public employment service as it is known today. It is basically a network of federal-state officers cooperating to provide free employment services. The main purpose of the local office is to help workers find jobs and to help employers find workers. One valuable special service of this agency is its "clearance" program, which makes it possible for workers and employers in different states to get together.

Probably the greatest advance for the American Apprenticeship system came with the passage of the National Apprenticeship Act of 1937, sometimes known as the Fitzgerald Act. In effect, "this calls upon the Secretary

of Labor to promote more apprenticeship programs in private industry and to encourage the use of the highest standards in apprenticeship training programs. The law contains no provisions for penalties. Its purpose is only to promote voluntary cooperation between industry and labor, and to offer technical assistance and guidance."[1] Since 1937, the Bureau of Apprenticeship and Training has cooperated very closely with employer, labor, vocational institutions, and apprenticeship programs. Their breakdown in order of precedence is: Federal Bureau, Regional Bureau, State Bureau, sometimes District Bureau, and Local Bureau. Advice and information concerning apprenticeship can be received at any of these bureaus.

In 1945, the first multi-state apprenticeship conference, initiated and planned by the Bureau of Apprenticeship and Training, was held in Bethel, Maine. Its purpose was for the, "interchange of information on the advantages of well-organized, efficiently conducted, comprehensive programs and on the latest and most successful training methods and procedures."[2] It was very successful and these multi-state conferences are now held annually on the Eastern Seaboard and in the Southern states, periodically

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[1]Kursh, Harry, Apprenticeships in America (New York: W. W. Norton & Company, Inc., 1958), 41.

[2]U. S. Department of Labor, Apprenticeship Past and Present (Washington, D. C., Bureau of Apprenticeship, Revised 1962), 27.

in the Western states.

The fact that over 9,000 joint apprenticeship committees have been established by 1963, is indication that employers and labor have cooperated in carrying out Federal legislation. In addition to these, national trade committees have been created, with committee members appointed by the Secretary of Labor. "These national committees function in a promotional as well as policy-making capacity in the trades they represent. They formulate, with the assistance of the Bureau of Apprenticeship and Training, national standards of apprentice training for the guidance of local employers and labor groups."[1]

In 1964, apprentices were in training in approximately 470 skilled occupations under 89 trade classifications and as many as 150,000 employers were taking part in their training, but still industry's demand of skilled and highly trained manpower continues to grow acute. The steady decline in the number of persons applying for apprenticeships should cause alarm among our political leaders as well as educators and employers because history has demonstrated that tradesmen are essential to our country's economic security and national defense and that craftsmen cannot be trained effectively by any other means

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[1]U. S. Department of Labor, Apprenticeship Past and Present (Washington, D. C.: Bureau of Apprenticeship, Revised 1962), 28.

other than apprenticeship.

In the 1930's when America was producing millions of automobiles, radios, refrigerators, and washing machines; Germany and Japan were preparing for military conquest. They were experimenting, training men, and building up arsenals of war materials. At the time of Pearl Harbor our enemies thought they had caught us "completely unprepared," because we were not tooled-up for war production nor had large arsenals of war materials. They knew we had large industries and great factories producing millions of luxury items, but they overlooked or underestimated America's great flexibility, capacity of industry, and the thousands of highly skilled craftsmen. An incident which happened in the early part of the war illustrates this very well.

A company which normally produced refrigerators was asked to turn out thousands of machine guns. At first thought, it seems that refrigerators and machine guns have very little in common production-wise, and they don't. However, the manager asked the army officer who had been sent down to solicit help if the sample gun he was holding worked satisfactorily and if the blue prints were accurate prints. Upon assurement, the manager turned to his skilled production men and said, "You men know as well as I do if the sample gun works satisfactorily and the blueprints of the pieces are accurate, you can duplicate each piece within

the set of production limits. When you put them together properly you know, as well as I do, that you can't get anything else but a good gun that works.--Now let's get to work and make some!"[1] When the war was over, this company had turned out over 350,000 machine guns and also had improved the gun's quality and performance, saved 25 pounds of critical material per gun, increased the original schedule of gun production five times, and sold it to the government at less than one-third the original contract price. This is only one example of how luxury item assembly lines began producing the materials needed to defeat the enemy. Not underemphasizing the importance of the American boys on the front lines and their lives that were given for our freedom, but the main point of interest here is that it was not the war materials that poured off the assembly lines in mass production that defeated the enemy but the highly skilled men of American industry thoroughly trained in technology and the art of adapting to change in keeping pace with a rapidly developing nation. The enemy had not caught us "completely unprepared," just unprepared. For over the years we had been building a secret weapon that they failed to recognize. This weapon was the thousands of American men, highly trained and skilled

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[1]Kettering, Charles Franklin, American Battle for Abundance (Detroit, Michigan: General Motors Corporation, 1955), 44.

in all the varied trades of this great nation, capable of adapting to change and national emergency. It is through apprenticeship and modern alterations of apprenticeship that young men entering the trades became proficient in the skills required for craftsmanship and in the skills required to keep America a world power.

The steady decline in the popularity of apprenticeship in the last few years has been due to many and varied reasons. Probably the greatest reason is that of wages. In the early American period the skilled worker made 200 or even 300 per cent more in wages than the unskilled; today this is not so. Unions and organized labor have raised the wages of the unskilled until their wages are within 30 per cent of the skilled workers in some cases, and the young men are asking "is it profitable to become an apprentice?" Another reason is the changing character of the trades. Dynamic change is taking place in the trades; design has changed and so have materials and methods. The process of invention and substitution has not assured the young men that a trade they train in will be in demand ten years in the future. Colleges, vocational schools, and military service are helping deplete the number of potential apprentices and a guilty finger can be pointed at our education institutions for not providing proper counseling and guidance, for not informing youth of the potential and need in highly trained and skilled men. The

apprenticeship agencies themselves have been more selective of those they train. They look for men with a high school diploma, capable of being trained, physically able, men who are socially adjusted, and sometimes under 21 years of age. These and many other reasons have aided the decline of apprenticeship in modern day.

Automation is a factor that has affected apprenticeship because automation reduced the number of workers needed and changed the skill requirement of those who do work. This phrase, "reduces the number of workers needed," has been misunderstood by many and derogated by others who oppose automation. Surprisingly, automation has created just as many or more jobs than it has taken away, but it has caused an imbalance between the unskilled and skilled jobs. The blue collar jobs have and are diminishing while the white collar jobs are increasing. Instead of viewing this change as opportunity for better jobs and better wages many have approached it with negative attitudes; therefore, automation has been accused of reducing the number of workers needed. Many of the factories that install automation offer their people opportunity for retraining and the development of skills necessary to work new and better jobs. Automation has also had its effect on education in that it has encouraged adults to enter evening school and as well as apprenticeship.

Apprentices are not being trained in sufficient

numbers to meet the demand of skilled men; consequently, the term "job pirating" has entered into the vocabulary of the employers. "The Chicagoland Fair" in 1957 is a great example of this. The businessmen knew that in the next five years Chicago was going to need an additional 500,000 skilled workers. The fair was set up at the cost of $5,000,000 and in the few days it lasted, it attracted nearly 1,000,000 visitors, most of whom were skilled workers from all over the Midwest. The job qualifications of the visitors were coded and fed into a Univac, the Remington-Rand electronic brain that was on display. The machine then flashed back information on jobs available to the visitors in Chicago. This fair was really nothing more than industrial recruiting in disguise. This technique may solve the shortage of a few industries, but it does not solve the growing shortage of skilled craftsmen in America.

During this decade 26 million young people will seek their first job; this is an increase of 40 per cent from the last decade. This should not alarm us because with the increase of people comes the increase of needs and wants and this creates work and jobs. The problem that should alarm us is the multitude of youth haunting the employment offices in a fruitless search for work, or hanging around home, street corners, bars, growing bored, angry, and defeated because they don't have a skill to offer the

the employers. High schools, vocational schools, apprenticeships, and colleges have a tremendous job to do; training the youth in vocations and trades, filling the ranks of the desperately needed skilled workmen and depleting the ranks of the unskilled. It should be understood that automation in many cases has been a real emancipator to the over-worked man, but also it is faced with problems that must be solved. All indications show that automation will increase and training and retraining will grow--not diminish.

Apprenticeship today, as in the past, is a stepping stone into supervisory positions. Many top level officials throughout American industry owe their success to apprenticeship. This fact was revealed in a recent survey conducted by the Associated General Contractors of America. It was found that out of 173 top officials of construction companies, presidents, vice-presidents, owners and partners, 90 per cent of them began their careers as apprentices. It was also found that 353 project managers, superintendents and foremen employed by these companies started their careers as apprentices. Three presidents of the Associated General Contractors, John MacLeod, C. P. Street and Warren S. Bellows who were high ranking executives of contractor firms, began as apprentices.

Another recent survey in one of the largest manufacturers of electrical and automotive equipment showed that 40 per cent of the 300 apprentice graduates, who were

currently on the company's payroll at the time of the survey, held important supervisory and executive positions. This clearly points out that many have and are using the apprenticeship system as a means of educational preparation for supervisory positions.

Today, June, 1966, there are about 400 skilled occupations in this country, and men become journeymen in these trades through apprenticeship. Those states without Apprenticeship Councils register their training programs, apprentices, and obtain Certificates of Completion of Apprenticeship for apprentices from the Federal Committee on Apprenticeship. To obtain an official Certificate of Completion of Apprenticeship, the apprentice must have trained under a "registered" training program, and the apprentice himself must be registered either with the State Apprenticeship Council or with the Federal Committee on Apprenticeship in Washington.

The majority of apprenticeships are for a term of four years or 8,000 hours, although they vary from two to six years. The figures of 8,000 hours is based upon a 40-hour work week; 50 weeks per year. In addition to the work on the job each apprentice must attend school for a minimum of 144 hours annually. Here he gains the technical and related information to his trade. If the local schools cannot set up these related training classes, the apprentice must undertake correspondence courses and obtain passing

grades to be eligible for his Certificate of Completion. Generally, when the classes are provided by the local schools the men attend four hours weekly for 36 weeks. Classes are usually not held in July or August.

Training and retraining by apprenticing is favored by the American people. They can earn a living while they learn a new trade and upon its termination earn wages appreciably higher than before. As of June 1, 1966, the state of Ohio in itself had 11,884 active training programs in all types of industry; with 11,007 active, registered apprentices.

Although the school bell has been replaced by the factory buzzer, for many thousands of young men, the apprentice must realize that he is still learning. Instead of struggling with subjects that had no meaning, he is now confronted with the subject of men, machines, and materials; these three are the dominating factors of industry. The young men who can rise to the challenge of industry will be the life blood of this nation.

The major aim of apprenticeship is to turn out skilled craftsmen (productive citizens), to keep our defenses strong and our living standard high. In the last 25 years, one million young men and women have entered industry as skilled craftsmen through the National Apprenticeship Program but this number has not been sufficient to replace those who retire or are promoted. Unless industry takes

more apprentices into apprenticeship and other training programs, we will not be able to keep pace with the growth of our population and economy in the 1970's.

With the continued upgrading of education and skill of the work force, it is apparent that workers who do not obtain adequate preparation for work, by completing high school, college, or through apprenticeship or some type of vocational training, will find it more and more difficult to find satisfactory and rewarding jobs.

Summary

Although apprenticeship is as old as recorded civilization, yet it is as new as the youngest trade in modern industry.

Prior to the factory system, the apprenticeship system played an important role in the field of education, and with a retreat into history it is found that apprenticeship played an even greater role in education and preparation of youth for entry into adult culture. In following it back to very early times apprenticeship was the only method of education.

After the factory system was established, apprenticeship suffered severe hardships. It was used as a disguise to get cheap labor; the apprentice was over-worked and neglected while the masters, factory owner, became wealthy. The apprenticeship system declined sharply. It was not until the late 1800's and early 1900's that apprenticeship rose to a respectable standard. Human welfare and the growing need of skilled workers was the factor that revived the apprenticeship system. Laws were passed to standardize the system and to encourage youth to apprentice. Federal legislation unified and promoted apprenticeship and it has developed into a very important and needed method of education today.

Ever since the Industrial Revolution, America has always had a shortage of skilled labor; today it is more acute than ever before in history. Apprentices are not being trained in sufficient numbers to meet the growing demand of trained men; consequently, job pirating has been practiced by industry. This technique may solve the shortage of a few industries, but it does not solve the growing shortage of skilled craftsmen in America.

Mass production and automation have changed the old notion that education is completed at a certain point. The rate of change in our economy is speeding up, and training and retraining are problems that will grow--not diminish. Automation has become a central theme of industry and has replaced men by the thousands--forcing them into new work of a specialized nature.

Seventy-three per cent of the 1963-64 first graders will be working jobs not yet created. How should we educate our youth in such a changing society? This is the problem plaguing education. Such great demand for highly educated people has influenced our formal education into a scientific technical trend. We educate younger (beginning with mechanical toys for babies) and educate longer. In the next decade most new skills will be learned on the job, not in school. Industries who do not already have training programs are making preparation for them. Formal industrial education will then expose its pupils mainly to the learning

experience in the related and technical field of knowledge that are needed for on-the-job training.

The apprenticeship system has had its rises and declines throughout history. Currently and for the last decade the number of apprentices has been on a very slight decline. It also appears that a trend is coming which at first will cause a gradual rise in numbers of apprentices and in the popularity of apprenticeship. This should initiate momentum and a steady rise in the apprenticeship system as a method of education for entering a highly skilled and technical world of work.

There is no turning back to the so called "good old days," for all the lessons of our educational history suggest that we are only capable of increasing specialization, not decreasing it. This will mean for those entering a trade more formal education that is vocational in nature as a pre-requisite for apprenticeship training.

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